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APPALACHIAN NURSERIES

W. J. BILLERBECK

L. F. BILLERBECK

FAIRVIEW AVENUE
WAYNESBORO, PENNA.

LINERS SPRING 1954



Phones :

Nurseries	(Till 9 P. M.)	1179J
Home	(Sundays & after 9 P. M.)	1179M



Members

American Association Nurserymen
Pennsylvania Association Nurserymen
Maryland Association Nurserymen

TERMS: Usual

PACKING CHARGES: Prices quoted
include all charges for packing.





Method of Delivery

Because present day packing and transportation costs are much too high, we make deliveries with our own trucks. The trucks are equipped with special bodies, and the plants are delivered in flats; thus there is no packing charge. Deliveries are made statewide to the following: all New England states, New York, New Jersey, Pennsylvania, Delaware, Maryland, Ohio, Kentucky, Virginia and West Virginia, and some sections of North and South Carolina, Illinois, Indiana, Missouri, and Eastern Michigan. We will deliver anywhere we can accumulate orders for a full minimum load. Our smallest truck handles 5200 plants in 2" bands; but deliveries will be made of almost any smaller number of plants, if it can be worked out so that the shipment can be grouped with others.

Delivery Charges

Banded plants average a little over 60 lb. per 100 (30 lb. per flat of 50). To establish equitable trucking charges to all points, the charges are based on the same principle as R. R. Express charges, except that the trucking charges are considerably lower. Take a shipment of 1500 (900 lb., or 30 flats) banded plants to Trenton, New Jersey, as an illustration; Old R. R. Express Guide shows the second class charge to Trenton for the 900 lb. as \$26.65. Deduct 25% and you have \$19.24, which would be our charge for truck delivery. The same shipment to either New York City, Dansville, or Ithaca, N. Y.; Wheeling and Hinton, W. Va.; E. Liverpool, Ohio; Blacksburg, Chatham, and Suffolk, Va., would cost exactly the same. (It is interesting to note that under the new tariff which became effective August 20th, 1953, the first-class express cost on the above shipment (900 lb.) in addition to packing cost, would amount to \$48.33 plus tax.)

Nearby points will, of course be less, whereas more distant points will be more; but you can, by using 60 lb. per 100 plants, and Express scale 11, less 25%, calculate the exact cost to you of our trucking service. Or, write us and we will be happy to give you the figures.



You can't beat



**the
BAND**



YOU CAN'T BEAT THE BAND.

That's right! When you use our liners in plantbands, your liner dollar buys "the most".

Plenty of reasons for that! But today everybody is selling "convenience". So to keep up with the times, we too are stressing "convenience".

'Was a time, not too many years ago, when everybody ate at the dining room table, and the "powder room" was next to the woodshed so you could haul back an armload of knots for the parlor. Now nose powdering is done in the house, and we share our beans and bread with the ants and flies out on the patio.

America certainly has gone in for "convenience".

The breadman interrupts your breakfast; your wife tosses your dirty shirts into a time clock; she pitches your next meal into a pressure cooker; and dashes out of the joint before you get your shoes laced. (Wonder where she goes, to use that much gas?)

Indeed, America has gone in for "convenience".

So the theme song of this issue shall be — "CONVENIENCE".

Actually, when you buy liners, there are but three ways they can be prepared for you. They might be "bed liners". That means they have been transplanted by the propagator, from his rooting benches, to outside beds. There the plants have grown for a year or two.

"Bed liners" are probably the most inconvenient to handle. They "push" everybody along the line. The grower who furnishes them must dig them before they start to grow, and you must plant them immediately when they arrive. Regardless of how busy you are, you must stop other work, and line them out at once. If you don't you may have a lot of dead plants on your hands. In any case, the "transplanting shock" is always most serious with "bed liners", and this shock increases in ratio with the size of the plants. Larger plants suffer more.

Potted plants are far more convenient to handle than "bed liners". When the propagator removes the rooted cuttings from his propagating benches, he pots each plant into a clay pot. He "plunges" the

(Continued on page 6)



Banded Shrubs and Evergreens

For 1954 Shipment

2" BANDS EXCEPT AS NOTED

Shipments will begin about May 1st to 10th.

See "Method of Delivery" on page 2.

RATES: Prices are "per 100"; 50 or more at 100 rate; 300 or more of a single variety at 5% off prices quoted; 1000 or more of a single variety at 10% off prices quoted; for less than 50 of a variety, figure \$3.00 per 100 above prices shown.

ABELIA grandiflora. (A best in shrubs. Blooms continuously and is practically a broad-leaved evergreen. Grows in any soil. Sold out for spring '54, but can supply plants from summer cuttings for early fall.)	10.00
AZALEAS. In addition to the species and varieties listed below we have a number of kurume, kaempheri and vuykiana types, but because many are in small quantities we hesitate to list the varieties here. Write for a special Azalea list if you are interested. -----	
AZALEA Alice. (Kaempheri. Camellia-rose with dark blotch.) -----	15.00
AZALEA Betty. (Kaempheri. Pink to orange.) -----	15.00
AZALEA Carmen. (Kaempheri. Large rose; good grower.) -----	15.00
AZALEA Caroline Gable. (Gable. Excellent pink; very hardy.) -----	16.50
AZALEA Corsage. (Gable. Single, large orchid, fragrant. Strong grower.) -----	15.00
AZALEA Fedora. (Kaempheri. Pink, very large flowers.) -----	15.00
AZALEA Gretchen. (Kaempheri. Flowers are a dark mauve.) -----	15.00
AZALEA hino-crimson. (Kurume. Brilliant red.) -----	15.00
AZALEA hindodegiri. (Broadleaved evergreen type; brilliant deep red flowers in early spring; hardy here. Booked up on this variety for spring '54, but this is one we grow in large quantities, and bookings for later delivery will be gladly accepted and shipped in rotation received.) -----	12.50
AZALEA indica alba. (or Ledifolia alba; pure white; this Azalea we like. It is less particular about soils than many, and is an excellent grower; blooms here when some of the kurume buds are frozen.) -----	15.00
AZALEA Kaempheri hybrids. (Evergreen; hardier than hinodegiri; mixed colors; predominately pink, but include some salmon and other shades to almost yellow. Actually these are mixed varieties, comprising some of the above named kaempheri varieties.) -----	13.50
AZALEA Lakme. (Kaempheri. Tall pink; very good and better than average hardiness.) -----	16.50
AZALEA Maroon. (Vuykiana. Very showy maroon-red.) -----	17.50
AZALEA Mary. (Kaempheri. Excellent; tall; deep pink.) -----	16.50
AZALEA mollis hybrids. (Mixed hybrids; the colors run the gamut from pure white through clear yellows, pink, orange and into almost clear reds. These are grown from seeds, and will contain every color. A. mollis is probably the easiest of all Azaleas to grow, because it is least particular about soils, and it is of extreme hardiness.) -----	12.50
AZALEA mollis. (We have a few in 3" bands.) -----	25.00
AZALEA mucronulata. (Korean species, and of course extremely hardy. Not usually available in the larger wholesale nurseries, because it is finished blooming before the usual "Azalea season" begins. However in great demand as a landscape subject, or for sale by retail nurseries. Deciduous. Pink flowers about 1½". Easy to grow.) -----	12.50



You Can't Beat The Band (Continued)

pots in coldframes or beds, using either sand, peat, or soil around the pots to keep them from drying too quickly.

Many firms have learned that the cost of paper shipping pots, and the labor involved in "knocking out" the plants, cost as much as new pots. So today, they supply the clay pots with the plants. That can be something of an advantage to the purchaser.

If the plants come "knocked out" and in paper pots, they must either be promptly repotted (and then likely plunged), or they must be "lined" to the field at once.

If the plants are still in the clay pots when they are delivered, they may be held for a few days, if watered often. Better, they should be promptly "plunged" to keep them in good shape.

In any event, plants in pots, or "from pots", as a whole, do not require the immediate action needed by "bed liners". Therefore, they are far more convenient to handle. Only trouble is there are too many things to be done all along the line. So they cost too much.

Now, let's take a quick look at these banded liners which we are offering. The whole program is devised for your CONVENIENCE.

The rooted cuttings are potted directly from the benches to the bands which were previously set up in flats. The flats of banded plants are then set into greenhouses or coldframes, to grow on until they are well established.

When our truck arrives at your place, the banded plants are in the flats in which they grew. The flats go with the plants. You can have them placed, right from our truck, so that you can water them when needed, and go about your more pressing jobs. They need no attention other than occasional watering. That's mighty convenient.

Then, you can plant them when you want to. If we held them here for another week, month, or even a year, we would water them; but that's all we would do to them, except possibly, a weeding or two.

Some of our customers are planting these banded plants with planters, and they tell us it works beautifully. Most, however, plant them by hand. The bands can be left on most things. The rule is probably to take the bands off surface-rooting plants like Azaleas, Rhododendrons, Pieris, etc., but leave them on other things. And that's convenient.

Just look at the many CONVENIENCES these banded plants offer you. No "pushing" to get them planted when you can least afford the time. No "plunging". No heavy pots to worry with; no "knocking out" in the field; no pots to gather; no transplanting "check".

OUR LINERS IN BANDS ARE THE ULTIMATE IN CONVENIENCE FOR YOU.



Banded Shrubs & Evergreens (Continued)

AZALEA poukhanensis. (Another Korean species with extreme hardiness and less particular about soils than most Azaleas. Blooms very early in the sprng with fragrant deep pink flowers about 1½" across. Grows to 4' here and blooms early in May. One of the easier Azaleas to grow. Deciduous, but almost evergreen here.) -----	12.50
AZALEA Purple King. (Kaempheri. Large light purple flowers. Good grower.) -----	16.50
AZALEA Rose Red. (Vuykiana. Like all of the Vuykianas, this is hardier than most of the kurumes.) -----	16.50
AZALEA schlippenbachi. (Deciduous; extra large deep pink blooms on large growing shrub.) -----	12.50
AZALEA Sherwoodi. (Kurume. Orchid; hardy.) -----	15.00
AZALEA Sherwood Red. (Kurume. Hardier than the usual run of kurumes.) -----	15.00
AZALEA Wilhelmina. (Vuykiana; pure white; very hardy; the correct name of this variety is Palestrina, but it is more popularly known in the trade as we have it listed, ie. Wilhelmina.) -----	16.50
BERBERIS juliana. (Fine evergreen shrub with fine foliage and big thorns. Booked up for spring '54, but will likely have available again for summer and fall planting. Orders will be filled in rotation received.) -----	15.00
BERBERIS thunbergi atropurpurea. (Red-leaf Japanese Barberry; restricted in wheat-growing states, but we can supply certificate.) -----	6.50
CALLICARPA purpurea. (Chinese Beautyberry; violet colored berries in August.) -----	8.00
CALYCANTHUS floridus. (Sweetshrub or strawberry-shrub, or sometimes just "shrub". Chocolate brown flowers. Your grandmother used to dry and crumble in her hands for a sachet. Becoming popular again.) -----	8.00
CARYOPTERIS Blue Mist. (Sometimes called Blue Spirea; silver-gray foliage; blooms August until frost. Summer delivery only.) -----	9.00
CLETHRA alnifolia rosea. (Pink Summersweet; needs well drained sour, peaty soil; summer delivery only.) -----	13.50
CORNUS mas. (Corneliancherry; large shrub; yellow flowers in April; scarlet berries.) -----	8.00
COTONEASTER divaricata. (Graceful spreading shrub with red berries; leaves turn to scarlet in fall.) -----	12.50
COTONEASTER horizontalis. (Rock Cotoneaster; low spreading shrub with bright red berries in fall; likes dry, sunny places.) -----	15.00
CRYPTOMERIA jap. lobbi. (Hardy Philadelphia south along the coast. Very large growing, and used extensively on massive buildings for accent. Actually the thing is so ugly it is beautiful.) -----	35.00
DESMODIUM penduliflorum. (One of the few deciduous shrubs that blooms in Sept. and Oct.) -----	10.00
DEUTZIA gracilis. (Slender Deutzia; dwarf, with white flowers in May; summer and fall delivery only.) -----	10.00
DEUTZIA gracilis rosea. (Pink-blooming form of the gracilis. Summer and fall delivery only.) -----	10.00
DEUTZIA lemoinei. (Lemoine Deutzia. Large clusters of white flowers in late spring; semi-dwarf; summer and fall delivery only.) -----	10.00
ENKIANTHUS companulatus. (Dense drooping racemes of bell-shaped yellowish flowers. Ericaceous; needs sand-peat soil mixture; booking orders for '55; if you are growing this plant and have seeds available please advise.) -----	15.00
ERICA darleysnis. (Winter-blooming Heath. Low evergreen, gray-green foliage. Blooms lavender very early in spring. Makes fine pot plant. Grows easily. Good money-maker. Likes Domestic Peats.) -----	10.00
EUONYMUS alatus. (Winged Burningbush. Available only for summer and fall.) -----	12.50



THEY'RE BETTER



Our liners in plantbands are giving our customers better results than liners from transplanting beds. Here is part of a letter from one New York customer:

"...The plants which we have received previously from you have done exceptionally well. In fact we purchased larger transplants from beds from another source, and in two growing seasons your's have caught up with them. We paid 30c to 50c each for the transplants. You shall have future orders from us, as we are so well pleased with the outcome of your plants."

Some years ago we did grow liners in beds. We certainly learned that it is not the perfect method. To get all of the orders shipped before the plants started to grow was almost impossible. Spring always brings a number of rains which prevented

(Continued on page 10)



Banded Shrubs & Evergreens (Continued)

EUONYMUS alatus compactum. (Compact Winged Burningbush. Summer and fall delivery.) -----	12.50
EUONYMUS fortunei acutus. (Excellent prostrate ground covering vine. Dark green foliage and does well in full sun to full shade. Extremely hardy.) -----	11.00
EUONYMUS patens. (One of the best evergreen shrubs. Grows to 6 feet; rich deep green foliage which remains almost all winter; easily grown.) -----	11.00
EUONYMUS pulchellus. (Evergreen foliage somewhat like perennial Teucrium; very dwarf; looks a little like Old English Boxwood when small; very fine edging plant or fine for low 10" hedge.) -----	11.00
EUONYMUS radicans vegetus. (Big-leaved Winter-creeper; evergreen with scarlet fruit.) -----	11.00
FORSYTHIA Lynwood Gold. (Deep yellow, and one of the best new Forsythias available.) -----	9.00
FORSYTHIA Spring Glory. (Fine new pale yellow and very heavy blooming.) -----	9.00
HYDRANGEA Fr. Nikko Blue. (New, supposed to be much hardier, and to have withstood temperatures of 20 below zero; blooms pink on alkaline soils; blue on acid soils.) -----	9.00
HYDRANGEA pan. grandiflora. (Hydrangea pee gee; ours is extra large flowering strain.) -----	9.00
ILEX aquifolium. (English Holly; booked up for spring '54, but orders are being accepted for spring '55 on both male and female forms.) -----	35.00
ILEX cornuta burfordi. (Burford's Chinese Holly; shiny dark green leaves berry-bearing; hardy here; we have never considered this too hardy, but we learn that some very fine plants are growing on the grounds of the Boyce Thompson Institute at Yonkers, N. Y., and have been there for a number of years. The variety is very desirable if you can winter it.) -----	25.00
ILEX crenata convexa-bullata. (Lots of noise about this one! A Japanese Holly with dark, shiny green leaves, black berries; fine low foundation plant; in good demand.) -----	15.00
ILEX crenata helleri. (Very dwarf and slow-growing form of Japanese Holly. Sold out for spring '54. Booking orders for spring '55.) -----	15.00
ILEX crenata microphylla. (Little leaf Japanese Holly.) -----	15.00
ILEX crenata rotundifolia. (Roundleaf Jap. Holly. Grows about as broad as high. Excellent broadleaved 'green.) -----	15.00
ILEX crenata Stokes Dwarf. (Plant patent number 887; this is a new very dwarf variety of extreme hardness. Unlike many of the dwarf crenata types, the foliage is not straggly, but the plant forms a nice compact specimen. Grows slowly, but we predict it will be in wonderful demand as soon as the stock can be built up in the nurseries.) -----	20.00
ILEX crenata uprite. (Grows larger and bulkier than most of the crenatas, and has very dark green foliage. Extremely hardy.) -----	15.00
ILEX opaca femina. (Berry-bearing American Holly.) --	25.00
ILEX opaca mascula. (Male American Holly; no berries, but you will need some of these to pollenate femina blooms for berries.) -----	25.00
ILEX pernyi. (A very dwarf, compact Chinese form with plenty of spines. Grows slowly, and about the same height as spread. Red berries.) -----	25.00
JASMINUM nudiflorum. (Winter Jasmine; bright yellow forsythia-like flowers very early in spring; foliage and stems are evergreen. Summer and fall '54 shipment.) -----	11.00
JUNIPERUS chin. pfitzeriana. (Pfitzer's Juniper; limited supply.) -----	15.00
JUNIPERUS chin. pfitzeriana aurea. (Golden-tip pfitzer's Juniper.) -----	15.00



(THEY'RE BETTER continued from page 8)

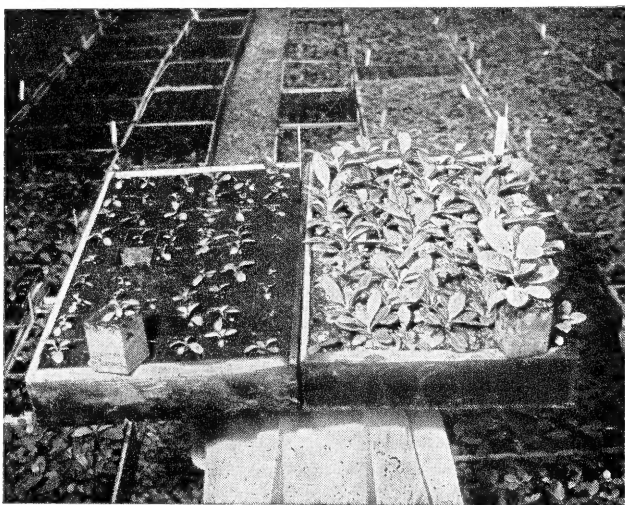
digging at the proper time. Also the same rains prevented our customers from preparing their planting ground. There is always too much delay between digging and planting, and as a result, there is always some mortality, and definitely considerable checking of the growth. It is almost impossible to get the plants planted at the proper time.

Banded plants can be planted anytime. Here is part of a letter from another customer who, in 1953, planted several truck-loads of these liners in late August and early September:

“...I wish you could see the stock that you sent up a few weeks ago. It is just beautiful. I dug up a few of the plants to see if they are rooting well enough to care for themselves over the winter, and they surely are. This is a new time of the year for us to plant, and we are anxious to see how the experiment works out.”

While we do not recommend planting as late as September, yet the fact remains that these banded plants can be planted as late as the middle of August in most areas, and they will prove perfectly satisfactory. That means that even though we deliver them in May or June, if you have other work that is more important, you can leave these plants right in the flats, (but of course water them when they need it,) and they will continue to grow just as if they were in the field.

That alone might mean much difference in your profit for the year. After all, you have only about 40 to 50 days in the spring during which time the bulk of your income must be realized. If you need not do your planting then, but can concentrate on selling and deliveries of your merchandise, it might mean to you considerably more profit from your business.



Results of tests of Imported (Polish) peat on left, domestic peat on right, See text pages 16, 18, etc.



Banded Shrubs & Evergreens (Continued)

JUNIPERUS chin. pfitzeriana compacta. (Compact form of Pfitzer's Juniper; doesn't grow quite so clumsy and large as common Pfitzers. Most nurserymen who grow this consider this a much better evergreen than <i>J. pfitzeriana</i> .) -----	15.00
JUNIPERUS chin. pfitzeriana nana. (Very dwarf form of Juniper Pfitzeriana.) -----	16.50
JUNIPERUS chin. sargentii. (Sargent's Juniper.) -----	15.00
JUNIPERUS communis depressa plumosa. (Andorra Juniper, or Purple Spreading Juniper; low spreading type; some don't like it, but it probably makes the nurseryman more money than any evergreen he grows.) -----	12.50
JUNIPERUS communis hibernica. (Irish Juniper; narrow upright form, with blue-gray foliage.) -----	12.50
JUNIPERUS glauca hetzi. (Hetz's Blue Juniper; grows well; makes up quickly and a good 'green.) -----	15.00
JUNIPERUS horizontalis. (Creeping Juniper.) -----	15.00
JUNIPERUS prostrata aurea. (Golden prostrate J. or Goldenflat Juniper.) -----	15.00
JUNIPERUS Nelson's Blue. (Here is a new Juniper which probably has not been officially named, but which makes up very quickly into a nice compact spreading form, and is very attractive. It is definitely a chin. form, and of the general shape of the <i>J. pfitz. compacta</i> , although it grows more quickly and has a better color; limited supply.) -----	15.00
JUNIPERUS sabina. (Savin Juniper.) -----	15.00
JUNIPERUS squamata meyeri. (Meyer's Blue Juniper; very beautiful blue spreading form; prefers colder climates.) -----	25.00
KALMIA latifolia. (Mountainlaurel; ericaceous; needs peaty soil; booked for spring '54, but accepting orders for spring '55.) -----	15.00
KERRIA jap. floraplana. (Double flowering Kerria; blooms like small yellow roses in early spring. Many nurseries complain that it seems to die back, but occasional spraying with some of the new fungicides will keep it a most beautiful shrub.) -----	10.00
KOLKWTZIA amabilis. (Beautybush. Does well in poor soils and is perfectly hardy. Blooms much like <i>Abelia</i> .) -----	12.50
LEUCOTHOE catesbaei. (Drooping Leucothoe or Andromeda. Does well with Azaleas and Rhododendrons. Supply for Spring limited, but large supply will be available for summer and fall.) -----	15.00
LIGUSTRUM ib. regelianum. (Regal Privet; and these are true "regals".) -----	9.00
LIGUSTRUM ib. vicary. (New golden-leaved form.) -----	9.00
LIGUSTRUM ov aureum. (Golden variegated Privet; nice where you need color contrast.) -----	8.00
MAGNOLIAS. (See page 17.) -----	
MAHONIA aquifolia. (Oregon Hollygrape; evergreen shrub with yellow berries and holly-like foliage. Last year we filled only a fraction of our orders for this plant, but this year we have them in quantity.) -----	13.50
MYRICA pensylvanica. (Northern bayberry or candleberry; fairly large shrub; gray berries and bark are highly fragrant.) -----	13.50
PHILADELPHUS corn. aureus. (Golden-leaved Mockorange in great demand; available for summer and fall '54 only. Supplies on hand already booked.) -----	12.50
PHILADELPHUS virginalis. (Virginal mockorange; stock plants from which cuttings were taken were "rogued" several years to leave only true double-flowering type.) -----	12.50
PICEA conica glauca. (Dwarf Alberta Spruce; very small plants from cuttings. Sold out for spring '54. Booking orders for '55 delivery. We must carry them a full year before they are presentable.) -----	16.00



THEY COST LESS

Then, there's the story about the young member of the "unfair sex" who wrote to the Secretary of the Treasury to ask which of Uncle's Bureaus would lend her money without interest. She said she understood that that's what he was doing for "furriners". So she'd like to borrow a lot. She'd buy Defense Bonds with it and put the bonds up as security. Then she'd use the interest to pay the income tax on what the bonds earned for her.

We are too modest to pretend that our banded plants will work out exactly that way for you. But they will save you a lot of expense that doesn't show up in the prices. They will save you money even after you get them.

Take planting costs! Our banded plants will cost you just about half of "the usual" to plant. Two kids will plant as many banded plants as two or three good men will "knock out" of clay pots and plant. Then too, no pots!

Or, look at the general upset that goes with "bed liners". The weather has to be good, or your planting ground will not be in shape. That's when you should be out on your landscape jobs, or digging some of the stock you have sold. But you have to stop everything

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Banded Shrubs & Evergreens (Continued)

PICEA excelsa maxwelli. (Spreadnig dwarf Spruce. Just as slow growing as the P. Concia glauca, but of globular form. Very compact and beutiful. Very small plants.) -----	16.00
PIERIS floribunda. (Mountain Pieris; ericaceous evergreen shrub with bell-shaped flowers in racemes. Needs peaty soils. We have them in excellent supply, and can book large orders for them.) -----	15.00
PIERIS japonica. (Evergreen Japanese Pieris; ericaceous; in great demand; supply somewhat limited.) --	15.00
PYRACANTHA cocc. lalandi. (Laland's Firethorn. Thorny bush with orange berries; sells well. Keep it planted in pots; it is difficult to transplant when it gets larger.) -----	12.50
RETINOSPORA ob. crippsi. (Golden semi-dwarf form. The obtusa Retinosporas are really nice evergreens; much better than the better known R. pisifera forms.) -----	22.50
RETINOSPORA ob. cyano viridis. (A comparatively new evergreen with very light blue foliage, somewhat similar to the old R. squarrosa veitchi; this variety however is somewhat smaller growing, and of much better type of evergreen. Makes up quickly.) -----	22.50
RETINOSPORA ob. gracilis. (Grows very much like the well known plumosa, in form, except that it is probably a little larger at the base, and somewhat slower growing. A good evergreen.) -----	22.50
RETINOSPORA ob. nana. (Dwarf form. The foliage of this type is extremely attractive. This is one of the better evergreens.) -----	22.50
RETINOSPORA plumosa. (Plumed Retinospora; grows easily and quickly and stands shearing well; plant for quick turnover.) -----	12.50
RETINOSPORA plumosa aurea. (Golden-tipped form of the above.) -----	12.50
RETINOSPORA plumosa aurea GOLDDUST or Lovetti. (More dwarf, with tips of foliage golden-flecked; very nice Ret.) -----	12.50
RETINOSPORA squarrosa veitchi. (Gray moss cypress.) -----	12.50

RHODODENDRONS

(We Got 'Em)

Indeed we do have them this year! For several years we have been unable to fill more than about half the orders. Now we have about three times as many as any year previously, and they are excellent plants. R. maximum, catawbiense, and hybrid seedlings from 100% red blooming plants, are in good supply. R. carolinianum is in fair quantity.

RHODODENDRON carolinianum. (Carolina Rhod. nursery-grown seedlings, hardy over wide area; pink blooms earlier than most Rhod.) -----	15.00
RHODODENDRON catawbiense. (Catawba Rhod. nursery-grown seedlings; hardy; buds deep purplish-red, open to crimson.) -----	15.00
RHODODENDRON hirsutum. (Garland Rhododendron; very slow growing, and if you live long enough it might be one of your small valuable plants. Ours are two years old, and still hardly big enough to make a noise about.) -----	15.00
RHODODENDRON hybrid seedlings. (Nursery-grown seedlings from seeds of red blooming hybrids.) -----	15.00
RHODODENDRON hybrid seedlings. (Same as above except larger plants in 3" bands; these we have only in limited quantities, but can accept some orders for them.) -----	30.00



(THEY COST LESS continued from page 12)

and do the field planting. And "bed liners" don't plant fast. Even potted plants go faster.

Your banded plants can be left right in the flats until you have your sales work and digging out of the way. Then, take the flats of banded plants to the field, set the plants in the furrows, fill back and firm, and the job is done.

Banded plants will easily save you half or more of your planting costs.

So you see, your banded plants are not only lower in original cost, but they also save still more money for you after you get them.



Bell Nurseries of North Haven, Conn. grew this specimen *Rhododendron* from our 2" banded liners planted in '51. Photo does not do plant justice. It is covered with bloom buds. They have 499 more of them, just as good. Little fellow on left is banded liner from our present stock.



Banded Shrubs & Evergreens (Continued)

RHODODENDRON maximum. (Rosebay Rhododendron; nursery-grown seedlings; twice transplanted, as are all of our Rhod.) -----	15.00
SALIX purpurea nana. (Blue Asiatic Willow; one of the very best hedge plants. It will grow quickly in your fields, to a fine money maker.) -----	8.00
SPIREA Anthony Waterer. (And these are true without mixtures.) -----	9.00
SPIREA billardi. (Pink blooming spikes, fine for floral uses; blooms continuously if kept cut.) -----	8.00
SPIREA collosa alba. (S. japonica alba; white Japanese Spirea, dwarf; for delivery in summer and fall of '54.) -----	10.00
SPIREA thunbergi. (Feathery light green foliage; pure white flowers in April and May. Summer and fall delivery.) -----	9.00
TAXUS baccata repandens. (Spreading English Yew.) -----	15.00
TAXUS cuspidata spreading. (Spreading Jap. Yew. You can't have too many.) -----	12.50
TAXUS cuspidata capitata. (Upright Japanese Yews from tip cuttings.) -----	15.00
TAXUS cuspidata compacta. (More compact form of cuspidata.) -----	12.50
TAXUS cuspidata densa. (Many nurseries offer this under the name of c. nana, but it is much faster growing and certainly is not a good substitute for the latter. This however is a good compact form of Taxus.) -----	12.50
TAXUS cuspidata nana. (True dwarf Japanese Yew. "Brevifolia" type.) -----	12.50
TAXUS intermedia. (Selected strain. We like them better than cuspidata.) -----	12.50
TAXUS media browni. (Broad upright type which branches to the ground, and can be sheared for low specimens.) -----	12.50
TAXUS media cascio. (Cascios Yew. We don't want to be responsible for naming more Yews, but this is kept separate from browni because it is of a darker color, and more rotund compact form.) -----	12.50
TAXUS media columnaris-Moons. (Moons columnar Yew; broad columnar form; good foliage.) -----	12.50
TAXUS media erecta compacta. (Hills.) (Hill's compact upright Yew.) -----	12.50
TAXUS media hatfieldi. (Hatfield Yew; compact cone-shaped.) -----	12.50
TAXUS media hicksi. (Hick's columnar Yew; hardy and good; heavy berry-bearing strain.) -----	12.50
TAXUS media hunnewelli. (Hunnewell's Yew; Spreading form of somewhat greater hardiness than many; good grower.) -----	12.50
TAXUS media kelseyi. (Upright dense growing form somewhat slow, with an abundance of berries.) -----	12.50
TAXUS media vermeulen. (Vermeulen upright Yew. Broad base, narrow top.) -----	12.50
TAXUS media wellesleyana. (Dense broad columnar, with very dark foliage.) -----	12.50
THUJA occ. elegantissima. (Gold-tipped Arborvitae; one of the best Arborvitaes.) -----	12.50
THUJA occ. globosa Woodwardi. (Probably one of the best of the globe Arborvitaes.) -----	12.50
THUJA occ. nigra. (The dark green form of American Arborvitae.) -----	12.50
THUJA occ. pyramidalis. (Pyramidal Arborvitae. Ours is a strain selected for good winter color and more compact growth.) -----	12.50
THUJA occ. warena. (Ware's or Siberian Arborvitae; broad pyramid of superior hardiness.) -----	12.50
TSUGA canadensis. (Canadian Hemlock; see page 17.) -----	
VIBURNUM burkwoodi. (Fragrant Snowball; semi-evergreen, hardy and a very fine plant.) -----	22.50



Growing **PAINS**



EXPERIMENTS WITH AZALEAS AND RHODODENDRONS

'Few years ago, a visiting nurseryman cracked, "It's so poor you couldn't raise a disturbance on it". He was looking at Waynesboro soil.

No effort will be attempted here to make a national issue of it, but that's not entirely true. Soil in the Waynesboro area does grow some things beautifully. However, it does not lend itself well to the growing of plants of the ericaceous group. This includes Azaleas, Rhododendrons, Pieris, Ericas (Heaths), Leucothe, etc.

Maybe the Waynesboro soil situation is actually a blessing in disguise. To grow, as we do, hundreds of thousands of plants in this group, much experimental work has been forced upon us.

Along the Eastern Seaboard, and in some parts of the Great Lakes region, there are many places where these plants grow excellently with little or no soil adjustment. Here and there, inland, where the soil is gravelly, and well drained, they do well. But personal observations in many nurseries indicate that plenty of others have the same troubles with soils as we do. While these reports and observations are not, by any means, the ultimate conclusions, we do believe that they might be of help.

Azaleas, Rhododendrons, etc. are good money makers; and if you can finish them well, they will bring you top profits. Most of us would like to "do a job" on them.

Preparing soils on an acreage basis is expensive. Most inland growers concentrate upon growing these ericaceous plants in outside beds. (See page 23 for suggestions on these beds.) Comments herein, therefore will be based upon the assumption that the growing job will be in outside beds.

We grow only liners, so these reports will be of experiments with small plants. It might well be noted that small plants react more quickly than larger ones; and a given detrimental treatment, as an illustration, will show up promptly on small plants. If the effect cannot be re-adjusted or counteracted, the small plants can always be washed free of soil

(Continued on page 18)



Banded Shrubs & Evergreens (Continued)

VIBURNUM dilatatum. (Linden Viburnum.) ..	12.50
VIBURNUM opulus-americanum. (American hibush cranberry; for delivery in the summer and fall of '54.)	9.00
VIBURNUM opulus nanum. (Dwarf Viburnum.)	9.00
VIBURNUM opulus sterilis. (Common Snowball; summer and fall delivery.)	9.00
VIBURNUM prunifolium. (Blackhaw. White blooms in May and June with black fruits following.)	9.00
VIBURNUM rhytidophyllum. (Leatherleaf Viburnum; summer and fall delivery.)	15.00
VIBURNUM tomentosum. (Doublefile Viburnum. Avail- able for summer and fall delivery.) ..	12.50
VIBURNUM tomentosum plicatum. (Japanese Snowball.)	17.50
WEIGELA Eva Rathke. (True type; red Weigela; one of our specialities.) ...	9.00
WEIGELA floribunda. (Crimson Weigela; taller growing crimson flowering.) ..	9.00
WEIGELA nana variegata. (Varigated leaf Weigela; booking for summer and fall '54.) ..	9.00
WEIGELA vaniceki. (Another red Weigela; supposed to be hardier than Eva Rathke; booking for summer and fall '54.)	9.00



Liners in Clay Pots

RATES: Prices are "per 100"; 50 or more at 100 rate; 300 or more of a single variety at 5% off prices quoted; 1000 or more of a single variety at 10% off prices quoted; for less than 50 of a variety, figure \$3.00 per 100 above prices shown.

Plants are left in the pots when delivered.

MAGNOLIAS in 4" pots.

alexandrina. (Large rosey-purple. Good grower.)	50.00
soulangeana. (Pink flowers.) ..	50.00
soulangeana nigra. (Tulip shaped; deep purple.)	50.00
stellata. (Star Magnolia. Semi-dwarf; white fragrant flowers.)	50.00
TSUGA canadensis. 3" pots. (Canadian Hemlock.)	18.00



(GROWING PAINS continued from page 16)

and rebanded. Larger plants likely would be slow to show damage from the same given treatment, but might be permanently injured. So the small plants are ideal for the tests, and provide excellent guidance for the treatment of larger specimens.

Again and again we hear comments about keeping these plants "WET". Actually a very good way to kill them is to keep them too wet. They like moist, cool, extremely friable, and well drained soils. They are unhappy in a "pocket" where they get "wet feet". Dig a 30" hole 10" deep, in heavy clay. Plant a 30" Rhododendron specimen in the choicest fill-back soil in the world, and the charge should be "murder". Within 6 months, half the leaves will have fallen; the tip half of the remaining leaves will be black. Any new growth will turn brown-black before it hardens, and in another 6 months the plant will be dead. Hole is too small. Much more fill-back should have been used. No drainage. The plant was in a "pocket" with "wet feet".

So therefore, any built up outside bed might well have some grade to it. If water accumulates in spots under it, such spots should be drained. Then, several inches of stoker cinders are excellent for the bottom of the bed.

The flats in which we grow ericaceous liners are but 2½" to 3" deep. One might think that soil of any kind, 2½" or 3" deep could not be overwatered. Several tight-bottom flats were selected, the planting medium packed somewhat tightly, planted, and purposely overwatered each day. After about a month it was found that nearly all but the surface roots had died, and were rotting. If the overwatering was stopped before the plant was completely dead, the plant started a new set of roots, but required careful attention and much time to begin growing again.

From the above it is obvious that the growing bed must be well drained; watering should be always moderate, and provisions made to drain away any accumulations of water in the bottom of the bed.

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Soils

Some years ago many tests were made with combinations of Waynesboro soils and various imported and domestic peats. As little as 5% of Waynesboro soil added to the combinations did definitely slow down the growth of the plants. Some half dozen imported peats and several domestic peats were used in the tests. Of the imported peats, Polish peat, without any native soil added, gave the best results. Of the straight domestic peats, that from the Capac bogs in Michigan produced the best results. The observations were reported in our 1951 bulletin accompanying a photo which is reprinted on page 10 of this bulletin. In the photo, the two are shown for comparison. Both were grown under the same conditions, and were of approximately the same age. It is

(Continued on page 20)



Perennial Liners in Plant Bands

For Spring Shipment

2" BANDS

RATES: Prices are "per 100"; 50 or more at 100 rate; 300 or more of a single variety at 5% off prices quoted; 1000 or more of a single variety at 10% off prices quoted; for less than 50 of a variety, figure \$3.00 per 100 above prices shown.

ASTILBE. (Spirea Astilbe or Perennial Spirea.)

Deutschland. Pure white.	11.00
Fanal. Intense red.	11.00
Salmon Queen. Light salmon, almost white.	10.00

DICENTRA. (Bleedingheart.)

eximia. Fernleaved type.	8.00
spectabilis. True old-fashioned.	10.00

PHLOX SUBULATA. (Mountain Pinks.)

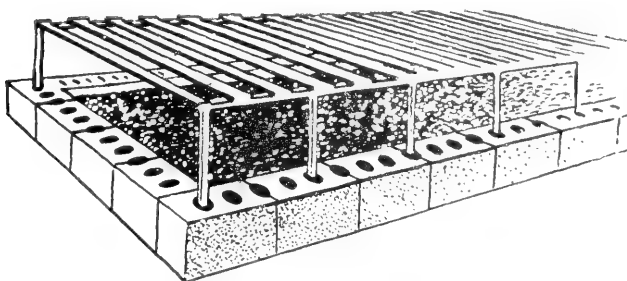
alba. Pure white.	7.50
atropurpurea. Rich wine red.	7.50
Blue Hills. Excellent blue.	7.50
moerheimi. Deep salmon pink.	7.50
rosea. Rose pink.	7.50
vivid. Pink with dark eye.	7.50



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Block Beds



For Growing Rhododendrons and Azaleas.
See page 23.



(GROWING PAINS continued from page 18)

evident that the domestic peats, for growing the ericaceous plants, are far superior.

Additional experiments have been carried on each year, but during all of this time the real growing has been in the domestic peats. In 1953 many more tests were set up, and some are now ready for reports.

The peat from Michigan, plus transportation and unloading, is expensive; to "stretch" it, bales of imported peats were run through the shredder and mixed with Capac peats with the following results:

90% D;	10% GS;	Check	100% Growth
45% D;	45% I;	10% GS;	70% Growth
60% D;	30% I;	10% GS;	85% Growth
80% D;	10% I;	10% GS;	90/100% Growth
100% I;			10% Growth

In the above D is domestic peat; I is imported peat; GS is ground sandstone; and the percentage of growth shows our estimate of the comparative sizes, after about 6 months, of the plants in the different tests. In fact the plants in the 100% imported peat looked almost exactly as those in the Polish peat shown in the photo taken in 1950. The plants in the domestic peat are possibly a little larger than those in this same photo.

Apparently, imported peats are not the proper "stretcher" for domestic peats.

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Our "Lab"

Our "laboratory" consists of a soil testing kit, which sometimes baffles us, a couple dozen bags of prepared chemicals (most of which we know nothing about—Chemistry was always very confusing), and one of the wife's discarded measuring cups. So no scientifically based explanations for the difference in the peats will be offered. Instead, let's go through another practical test with peats and plants, and see if we can prove anything.

Ten flats of domestic peat, mixed 10% ground sandstone, were made up and placed in our boiler room for nearly 3 months. The peat became very dry and "caked" hard. Then the flats were set in $\frac{3}{4}$ " of water in dipping pans, and water added as needed until moisture rose to the surface. Rhododendron transplants were then carefully washed free of peat (to prevent any transfer of soil bacteria to the peat in the test). The Rhododendrons were then planted in these 10 flats. After 4 months the growth compared very favorably with that of the plants shown in straight imported peat in the photo.

Conclusion: Imported peats, before they are sent to us, evidently are thoroughly dehydrated to kill bugs and diseases. Probably steam is applied. The dehy-

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(GROWING PAINS continued from page 20)

drating apparently kills everything, including helpful soil bacteria. No doubt this peat can be re-infected with these helpful bacteria over a period of time. A compost pile of layers of imported and domestic peats might eventually provide an excellent growing medium for ericaceous plants. Also it is evident that a peat which has become thoroughly dried, whether domestic or imported will not give good results. (We moisten our peat bin regularly as a result of these observations.)

Over the past 5 or 6 years domestic peats from many sources have been tested. The purpose, of course, has been to try to find a nearby source, and at the same time be assured of getting results equal to those being had with the peats from Capac.

In 1953 some 5000 plants were banded in "mixes" from the Pennsylvania Peat Moss, Inc., Hazelton, Pennsylvania. The mixes were made up of various grades. A mixture of 60% humus and 40% peat moss seemed best, and produced equally as good results as have any of the domestic peats yet tried. With transportation to Waynesboro, the overall cost of these peats from Hazelton is a little over one-half of the total cost of the peat from Capac. The Pennsylvania Peat people deliver with their trucks; and one can obtain the 60-40 mix already prepared by them. In the tests of this Pennsylvania Peat no sandstone was added to the "mix", because the fiber appeared coarse enough without it. Further tests with all of the other combinations, and under all conditions previously reported, are now in progress, and will be reported upon later. Considering the comparative costs, and looking at the results, this one we like.

We do remind you that we have no thought in recommending one peat as better for the purpose of growing these plants, except that we are anxious to see our customers get the best results from our liners; and our reports are made as we see them, with fairness uppermost in mind. If any peat proves to be unsatisfactory, it will be reported as such, regardless. Likewise any peat which does a good job in growing these plants will be so reported.



Soil Conditioners and Fertilizers

By the time we squirt Waynesboro city water over these plants for a few months, the pH has slowly but surely crawled up too high. Waynesboro city water is alkaline. Before long the plants appear unhappy unless some counter measures are taken. Aluminum sulphate (two lb. to 100 sq. ft.) lowers the pH rapidly. But frequent applications seem to set up a toxic condition which we do not fully understand. At present some few flats of plants are being treated monthly with aluminum sulphate to learn what will eventually happen. Sulphur (1 lb. to 100 sq. ft.) seems to be much more satisfactory for lowering the pH. The plants seem to like it very much, and

(Continued on page 22)



recently all peats being used have been treated with one tablespoonful of sulphur to 5 gallons of any of the "mixes". The sulphur acts much more slowly, which is probably desirable, unless a quick treatment should become necessary. The addition of 1 lb. to 100 sq. ft. of outside bed surface, of sulphur, might be good pH insurance. That would be particularly true if you use city water.

Imported peats have one decided superiority over domestic peats. There may be others, too, but they are particularly low in pH. Most domestic peats test about 5.75 as compared to imported peats around 4.50 to 4.75. Domestic peats are decidedly short of phosphorus, but exactly where the phosphorus level should be to obtain best results is a question. Some 40 experimental flats to which various amounts of phosphate have been added are under test at present, and will be reported upon later. Sand supplements should be tested for acidity. Many are definitely alkaline. All domestic peats tested are very high in nitrogen, and additions of nitrogens might be of doubtful value. Most domestic peats are slightly short of potash, but none were found to be critically short; and while a few tests are being run with potash additions, we are inclined to believe that they will not show much improvement over the untreated samples. Magnesium appears short in most of the peats, but this is easily corrected by one or two waterings per year with a tablespoonful of Epsom Salts per gallon of water. That should be ample for a single treatment.

Sawdust

Some nurserymen use quite large proportions of sawdust in Rhododendron and Azalea beds. Some report uniformly good growing results. Others report "hits or misses". Age of sawdust, kind (oak pine, etc.), and proportion used, are important factors. No tests have been made here on sawdusts. Observations in other nurseries have led us to believe that sawdust not only is more or less detrimental when added to growing mediums, (possibly depending upon age, kind, and quantity), but also that it can prove to be poor mulching material. The pH of sawdusts is difficult to control; the stuff gets "water-logged" during prolonged rainy periods; and unless it is very old and well rotted, it can be pretty rough on soil nutrients. As the sawdust deteriorates, large amounts of nitrogen are drawn from any soils in contact with the 'dust.

Pine shats (needles), marsh hay, or even straw might be better. The ideal mulch is probably imported peat; and considering initial cost, plus labor, the imported peats likely are less expensive in the long run.

(Continued on page 23)



(GROWING PAINS continued from page 22)

Outside Beds

'Couple of years ago this bulletin carried an illustration and description of a "block bed". Requests for copies have depleted the supply of old bulletins; so responding to requests, here it is again with the same information. (Following is copied from the old bulletin. See page 19 for illustrated cut.)

A good customer tells us that he just didn't feel like tossing a lot of high-priced peat moss around. Yet he did want to grow some Azaleas and Rhododendrons.

To solve the problem, he set 8 x 16" Cement Blocks on top of the ground, in rectangular form, to shape up a bed 6' wide and 50' long. Coarse ashes were filled into the bed to a depth of two or three inches. The blocks were placed with the holes up, and the holes were filled with soil, as well as the "joints" between the blocks.

Enough stakes were driven into holes in the blocks to support a 1 x 3" strip of lumber about 15" above the tops of the blocks. Shade lath were placed across these strips. Thus he had a low cost, yet substantial container to keep the moss from being scattered about; and he probably could not have devised a better place for growing Azaleas, Rhododendrons, etc.

The bed was filled to the top with peat, and the plants planted in this straight moss where they certainly grew well. Looked like a "top" idea.



Insecticides

No tests have been made on any new products during 1953. PEST-HEX from the Blue Ridge Fruit Exchange, Waynesboro, Penna. is the only thing of this kind being used. It has proved so very satisfactory, that no effort has been made to search for anything new or better. One new advantage: the cost of the stuff has come down a little, due to increased sales and production. The cost per lb. is more than many insecticides or fungicides. Yet, because one application does such a complete job, for which usually several applications are necessary, savings in labor costs more than offset the difference.

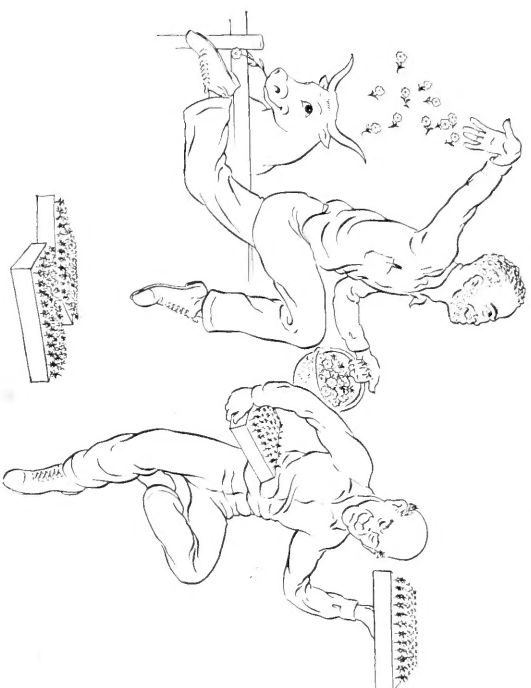
So far, PEST-HEX has given us complete control on every bug and leaf disease encountered here. The possible exceptions are scales, and even these disappear when we catch them in motion. We use it on cuttings in the benches, and on every kind of plant we grow. Last summer we had one large lot of Azalea cuttings with many leaf rollers. PEST-HEX didn't get down and dig out the bugs, but as soon as they got out far enough to increase their eating range, they no longer lived. Worked fine.

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